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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,753	01/28/2000	Clifford A McCarthy	10992091	2627

22879 7590 03/26/2004

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EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/493,753

Applicant(s)

MCCARTHY ET AL.

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 3,4,14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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DETAILED ACTION

1. Claims 1-20 are presented for examination.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):

- the proportional factor is $(KP \times P_i')$, wherein KP is the proportional constant and P_i' is the proportional variable, and $P_i' = P_i - V_i$, wherein P_i is performance information and V_i is the goal;
- the integral factor is $(KI \times I_i)$, wherein KI is the integral constant and I_i is the integral variable, and $I_i = (I_{iold} \times IH_i) + P_i'$, I_{iold} is a previous value for I_i , and IH_i is an integral history constant which is a user-selectable input, and P_i' is the proportional variable; and
- the derivative factor is $(KD \times D_i)$, wherein KD is the derivative constant and D_i is the derivative variable, and $D_i = (P_i' - P_i'old)/t$, wherein P_i' is the proportional variable, $P_i'old$ is a previous value for P_i' , and t is a time between the performance information used to calculate P_i' and previous performance information used to calculate $P_i'old$.

and

- the allocation request value, R_i , is determined by $R_i = (KP \times P_i') + (KD \times D_i) + (KI \times I_i) + R_iold$, wherein R_iold is a previous value for R_i .

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-13, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eilert et al. (hereinafter Eilert) (US 5,675,739) in view of Qiu et al. (hereinafter Qiu) (US 2002/0129048 A1).

4. As to claims 1, 12, 18, Eilert teaches a method, system and program for managing allocation of computer resources among applications operating on a computer, based upon at least one user-defined goal for at least one application and application performance information related to the one application (*see Abstract*), the system comprising:

- a calculator that determines an allocation request value from the goal and the performance information (*col. 4, lines 6-25, Fig. 1, items 105, 115, 151, and 152 and Fig. 2*); and
- an arbiter that is operative to adjust the allocation request value into an adjusted allocation value when the allocation request value and allocation request values

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associated with other applications exceeds a predetermined value (*col. 4, lines 6-25, Fig. 1, items 105, 115, 151, and 152 and Fig. 2*).

5. Eilert fails to explicitly teach calculating based on a proportional factor, an integral factor, and a derivative factor. However, Qiu teaches the idea of using relationships, algorithms and equations with "PID" factors (Proportional-Integral-Derivative) to dynamically allocate resources (*page 12, [0095]*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the PID factors to the existing system and method as a way to measure/calculate to dynamically allocate the resources (*page 12, [0095]*).

6. As to claims 2 and 13, it is rejected for the same reason as in claim 1. In addition, Eilert in view of Qiu fails to explicitly teach the factors include a proportional constant and variable. However, it is well known in the art that a mathematical factor can consist of a proportional variable and constant.

7. As to claim 5, Eilert in view of Qiu fails to explicitly teach wherein a number format for each of the goal, the performance information, and the allocation request value is selected from the group consisting of: a floating point number, and an integer number. However, it is well known in the art and obvious to one of ordinary skill in the art that data values can consist of floating point numbers, integer numbers, etc. because they are standard formats/representations of data.

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8. As to claim 6, it is rejected for the same reasons as stated in the rejection of claim 5. In addition, it is well known in the art and obvious that the values can be rounded cumulatively.

9. As to claim 7, Eilert teaches wherein: the performance information is generated by a performance monitor that monitors a characteristic of the application associated with the goal (*Fig. 1, item 105*).

10. As to claim 8, Eilert teaches wherein: the allocation request value is used by a process resource manager to allocate computer processing resources among the applications operating on the computer (*Fig. 1*).

11. As to claim 9, Eilert teaches wherein the one application is one of a plurality of applications, and each application of the plurality has an associated user-selectable priority and an allocation request value, wherein: the arbiter determines whether each application of the plurality of applications having the same priority can be allocated resources to equal its associated allocation request value, if so, then the arbiter forms the adjusted allocation request value for each application by equaling the adjusted allocation request value to the allocation request value, and if not, then the arbiter determines whether each application of the plurality of applications having the same priority can be allocated resources to equal a target value (*col. 4, lines 59-67 through col. 5, lines -15*).

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12. As to claim 10, Eilert teaches wherein: the target value is selected by the arbiter from the lowest of a previously allocated request value, which has not been previously selected as a target value, and an allocation request value of an application of the plurality of applications having the same priority, which has not been previously selected as a target value (*col. 14, lines 19-32*).

13. As to claim 11, Eilert teaches wherein: the arbiter forms the adjusted allocation request value for each application by equaling the adjusted allocation request value to the target value, if the arbiter determines that each application of the plurality of applications having the same priority can be allocated resources to equal the target value (*col. 4, lines 59-67 through col. 5, lines -15, col. 14, lines 19-32*).

14. As to claims 16 and 19, they are rejected for the same reasons as stated in the rejections of claims 9 and 10.

15. As to claim 17 and 20, they are rejected for the same reasons as stated in the rejections of claim 9.

Allowable Subject Matter

16. Claims 3-4 and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
3/20/04


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